

The opinion in support of the decision being entered today was *not* written
for publication and is *not* binding precedent of the Board.

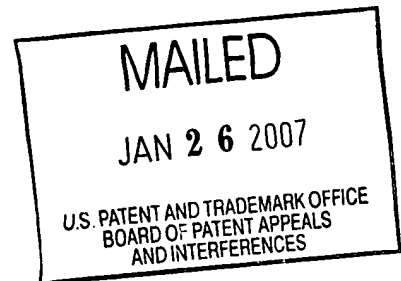
UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex Parte GARETH GEOFFREY HOUGHAM, MARY ELIZABETH ROTHWELL, and
RONALD WAYNE NUNES

Appeal No. 2006-2841
Application No. 10/037,251

ON BRIEF



Before RUGGIERO, MACDONALD and HOMERE, Administrative Patent Judges.

HOMERE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1 through 10, all of which are pending in this application. Claims 11 through 14 have been withdrawn from consideration. We affirm.

Invention

Appellants' a multi-layer architecture for a microcontact printing stamp. The architecture uses separate layers in the printing stamp structure to impart particular properties to different parts of the stamp.

Claim 1 is representative of the claimed invention and is reproduced as follows:

1. In microcontact printing wherein an electronic circuitry pattern on the surface of an elastomeric stamp member is operable in a transfer of a further processing responsive material, to a surface of a substrate, the improvement comprising:

said elastomeric stamp member having a surface region of a material imparting to said stamp member at least one of the properties of adhesion and wettability enhancement of the material of said circuitry pattern to said surface region, and,

said elastomeric stamp member further having at least one subsurface region, each said subsurface region being of a material imparting a particular physical property to said stamp member.

References

The Examiner relies on the following references:

| | | |
|----------------------|-----------|----------------|
| Kumar et al. (Kumar) | 5,512,131 | April 30, 1996 |
| Blees et al. (Blees) | 6,739,255 | May 25, 2004 |

Rejections at Issue

A. Claims 1 through 10 stand rejected under 35 U.S.C. § 112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

B. Claims 1 through 5 and 7 through 9 stand rejected under 35 U.S.C. § 102 as being anticipated by Blees.

C. Claims 6 and 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Blees and Kumar.

Rather than reiterate the arguments of Appellants and the Examiner, the opinion refers to respective details in the Brief¹ and the Examiner's Answer.² Only those arguments actually made by Appellants have been considered in this decision. Arguments that Appellants could have made but chose not to make in the Briefs have not been taken into consideration, and are deemed to have been waived. See 37 CFR 41.37(c)(1) (vii)(eff. Sept. 13, 2004). See also In re Watts, 354 F.3d 1362, 1368, 69 USPQ2d 1453, 1458 (Fed. Cir. 2004).

OPINION

After full consideration of the record before us, we agree with the Examiner that claims 1 through 10 are properly rejected under 35 U.S.C. § 112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellants regard as the invention. We also agree with the Examiner that claims 1 through 5 and 7 through 9 are properly rejected under 35 U.S.C. § 102 as being anticipated by Blees. Additionally, we agree with the Examiner that claims 5 and 10 are properly rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Blees and Kumar. Accordingly, we affirm the Examiner's rejections of claims 1 through 10 for the reasons set forth *infra*.

¹ Appellants filed a corrected Appeal Brief on September 13, 2005. Appellants filed a Reply Brief on April 24, 2006.

² The Examiner mailed an Examiner's Answer on February 24, 2006. The Examiner mailed a communication on July 17, 2006 indicating that the Reply Brief has been entered and considered.

I. Under 35 U.S.C. § 112, 2nd Paragraph, is the Rejection of claims 1 through 10 as Being Indefinite Proper?

With regard to claim 1, the Examiner asserts that the recited phrase “said elastomeric stamp member having a surface region of a material imparting to said stamp member at least one of the properties of adhesion and wettability enhancement of the material of said circuitry pattern to said surface region” is confusing and ambiguous. In response, Appellants argue that porosity and wettability are well-known properties in the field of stamp printing, and they are therefore not indefinite.

Our review of the present record indicates that the Examiner’s rejection was not intended to question the definiteness of the cited properties themselves. Rather, the rejection seemed to have raised the possibility of more than one meaning for the cited phrase, as recited in the claim. Even though we do not find substantial merits to the Examiner’s position, we, are, however constrained to affirm the rejection since Appellants’ arguments failed to particularly address the specific question raised by the Examiner in the rejection.

With regard to claims 4 and 5, the Examiner asserts that the cited claims are indefinite since they tend to modify claims 2 and 3 respectively instead of further limiting the cited claims. Appellants failed, however, to submit any arguments in the Briefs to rebut these rejections. This issue is therefore deemed to have been waived by Appellants. See In re Watts. Consequently, we sustain the rejection.

With regard to claim 7, the Examiner asserts that it is unclear whether the limitations recited in there cited claim are directed to the finished stamp or an intermediate product for

creating the stamp. Appellants provided no response to this rejection in the Briefs. Even though we do not find substantial merits to the Examiner's position, we are however constrained to affirm the rejection since Appellants' failure to address this issue constitutes a waiver. In consequence, we sustain the rejection.

With regard to claims 6 and 10, the Examiner submits that the claims are indefinite because they improperly use a tradename to identify a product as opposed to the source of the goods. In response, Appellants submitted that the recited tradenames should have been capitalized. Appellants failed, however, to submit any further arguments in the Briefs to rebut these rejections. This issue is therefore deemed to have been waived by Appellants. See In re Watts. Consequently, we sustain the rejection.

II. Under 35 U.S.C. § 102(e), is the Rejection of claims 1 through 5 and 7 through 9 as Being Anticipated By Blees Proper?

It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. **See In re King**, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and **Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.**, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

With respect to representative claim 1, Appellants argue in the Appeal Brief that the Blees reference does not disclose the superimposed layers in the stamp. (Appeal Brief, page 8 and Reply Brief, page 7). To determine whether claim 1 is anticipated, we must first determine the scope of the claim. We note that representative claim 1 reads in part as follows:

[E]lastomeric stamp member having a surface region of a material imparting to said stamp member at least one of the properties of adhesion and wettability

enhancement... said elastomeric stamp member further having at least one subsurface region, each of said subsurface region being of a material imparting a particular physical property to said stamp member.

At paragraphs 13 through 17, Appellants' specification states the following:

[0013] On the surface of the pattern 10 a relatively thin layer 13 of the material that is to become the surface of the stamp is applied. The layer 13 has properties such:

[0014] that it can be applied in a thin layer such as by the technique of spinning,

[0015] that in the uncured state it centers the interstices between the embossed portions of the pattern 10,

[0016] that it can be made relatively handleable by a partial curing operation involving a mild amplitude and duration heat cycle, such that mixing does not take place with a subsequently added layer.

[0017] The material siloxane is one example of an appropriate material for layer 13. Commercially available silane material is the material known as Dow Corning Sylgard 184.

At paragraph 21, Appellants' specification states the following:

[0021] Referring to item D, the gap 19 of item C is filled with a precursor mix of a bulk producing material 21 that will, on curing such as with appropriate temperature cycle, impart the bulk structural properties of the being constructed stamp and cause the optimized adhesion properties of the material 13 to adhere to the bulk material 21. A satisfactory material for the precursor mix is a fluid solution of the material siloxane of which the material known as DowCorning Sylgard 186 is an example. Where the material 13 is only partially cured at the intermediate structure 14 stage, a cross reaction occurs at the interface and a superior adhesion to the material 21 in the structure in item D is achieved.

We note that while the claim does require at least two materials, each to be used in a separate region to thereby impart different properties to said stamp, the claim does not particularly recite superimposing said materials. We note, nonetheless, that such superimposition of the materials, as argued by Appellants in the Briefs, is readily apparent in figures 1 through 3.

Now, the question before us is what Blees would have taught to one of ordinary skill in the art? To answer this question, we find the following facts:

1. 1. At column 2, lines 3 through 22, Blees states the following:

The stamp body may be provided on the carrier body by pouring, injecting, or some other simple technique. The stamp body is preferably manufactured from an elastic material. Such a material preferably has a Young's modulus of between $10^{3.3}$ and $10^{6.6}$, in particular between $0.25 \times 10^{5.5}$ and $5 \times 10^{5.5}$ N/m². Examples of such materials are inter alia poly(dimethylsiloxane), which material is also known as PDMS, poly(butadiene), poly(acrylamide), poly(butylstyrene), poly(urethane) and copolymers of these materials. Any other material known to those skilled in the art of soft lithography may obviously also be used in the stamp body.

A choice may be made from a variety of materials for the manufacture of the carrier body. Examples of suitable materials are a metal, such as aluminum or steel, a ceramic material, and an organic material such as a synthetic resin, which may or may not be reinforced with organic or inorganic fibers. Preferably, the carrier body has a much higher rigidity constant than the material of the stamp body. The carrier body may be integral with the ink reservoir.

At column 3, lines 6 through 13, Blees states the following:

[T]he carrier body comprises a porous material. The porous material is, for example, a ceramic material or a synthetic resin. Such porous materials are known to those skilled in the art of inorganic or organic materials. Preferably, the porous material has a porosity of more than 40% in relation to the volume of the reservoir, the material is inert in the ink, and the material does not swell in the ink.

With the above discussion in mind, with regard to representative claim 1, we find that one of ordinary skill in the art at the time of the present invention would have readily found that Blees teaches the claimed invention. Blees discloses a stamp having two sides for use in a lithographic process. Particularly, the first side includes a stamp body, made of polydimethylsiloxane (PDMS) material. The second side of the stamp includes (1) a carrier body, made of a

rigid and porous material, and (2) a reservoir, which provides the stamp with additional sturdiness. One of ordinary skill in the field of lithography would have readily recognized that the PDMS material covering the stamp body is equivalent to the (siloxane) material that covers the surface region of the elastomeric stamp member, as claimed. Therefore, the ordinarily skilled artisan would have duly recognized that, similarly to the claimed (siloxane) material, Blees' disclosed PDMS material would impart to said stamp body the properties of adhesion and wettability enhancement. Further, the ordinarily skilled artisan would have aptly appreciated that the rigid and porous material that covers the carrier body of the stamp is equivalent to the claimed material that covers the subsurface region. Consequently, the porous material would be able to impart to the stamp the same physical properties as those claimed. Additionally, as depicted in figure 1 of Blees, the ordinarily skilled artisan would have readily ascertained that the stamp body covered with PDMS material is adjoined with the carrier body covered with a rigid/porous material to amount to a plurality of superimposed layers of materials.

Consequently, we do not find error in the Examiner's stated position, which concludes that Blees teaches a plurality of superimposed layers in different regions of a stamp to impart different properties to said stamp. We conclude, after considering of the record before us, that the evidence relied upon and the level of skill in the particular art would have suggested to the ordinarily skilled artisan the invention as set forth in claims 1 through 5 and 7 through 9. Accordingly, we will sustain the Examiner's rejection of claims 1 through 5 and 7 through 9.

III. Under 35 U.S.C. § 103, is the Rejection of claims 6 and 10 as being unpatentable over the Combination of Blees and Kumar Proper?

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a **prima facie** case of obviousness. **In re Oetiker**, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). **See also In re Piasecki**, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing that some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art suggests the claimed subject matter. **In re Fine**, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellants. **Oetiker**, 977 F.2d at 1445, 24 USPQ2d at 1444. **See also Piasecki**, 745 F.2d at 1472, 223 USPQ at 788. Thus, the Examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the Examiner's conclusion. However, a suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, as the teaching, motivation, or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. **In re Kahn**, 441 F.3d 977, 987-88, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) citing **In re Kotzab**, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000). **See also In re Thrift**, 298 F.3d 1357, 1363, 63 USPQ2d 2002, 2008 (Fed. Cir. 2002).

An obviousness analysis commences with a review and consideration of all the pertinent evidence and arguments. "In reviewing the [E]xaminer's decision on appeal, the Board must

necessarily weigh all of the evidence and argument.” **Oetiker**, 977 F.2d at 1445, 24 USPQ2d at 1444. “[T]he Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency’s conclusion.” **In re Lee**, 277 F.3d 1338, 1344, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

With respect to claims 6 and 10, Appellants argue in the Appeal and Reply Briefs that Blees does not teach a plurality of superimposed layers in different regions of a stamp to impart different properties to said stamp. We have already addressed this argument in the discussion of claim 1 above, and we do not agree with Appellants. Further, Appellants assert that Kumar does not cure the deficiencies of Blees to amount to the claimed invention. We do not find any such deficiencies in Blees for Kumar to remedy. We therefore conclude, after considering the record before us, that the evidence relied upon and the level of skill in the particular art would have suggested to the ordinarily skilled artisan the invention as set forth in claims 6 and 10. Accordingly, we will sustain the Examiner’s rejection of claims 6 and 10.

CONCLUSION

In view of the foregoing discussion, we have sustained the Examiner’s decision rejecting claims 1 through 10 under 35 U.S.C. § 112, 2nd paragraph. We have also sustained the Examiner’s decision rejecting claims 1 through 5 and claims 7 through 9 under 35 U.S.C. § 102. Additionally, we have sustained the Examiner’s decision rejecting claims 6 and 10 under 35 U.S.C. § 103. We affirm.

Appeal No. 2006-2841
Application No. 10/037,251

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED



JOSEPH F. RUGGIERO
Administrative Patent Judge



ALLEN R. MACDONALD
Administrative Patent Judge



JEAN R. HOMERE
Administrative Patent Judge

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